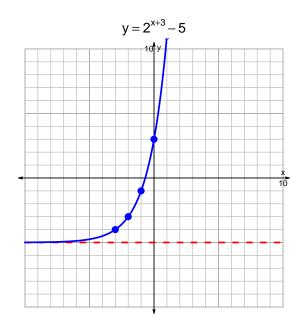
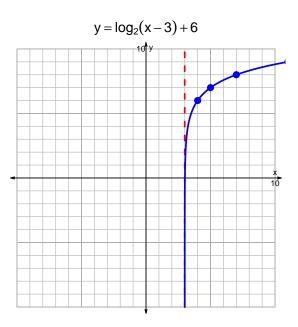
s18quiz: EXP LOG (SLTN v229)

1. Graph $y=2^{x+3}-5$ and $y=\log_2(x-3)+6$ on the grids below. Also, draw any asymptotes with dotted lines.





2. Write (but do not evaluate) the solution to the equation below by writing a logarithmic expression.

$$-29 = \left(\frac{-7}{3}\right) \cdot 2^{-4t/5}$$

Divide both sides by $\frac{-7}{3}$.

$$\frac{29 \cdot 3}{7} = 2^{-4t/5}$$

Take log, base 2, of both sides.

$$\log_2\left(\frac{29\cdot 3}{7}\right) = \frac{-4t}{5}$$

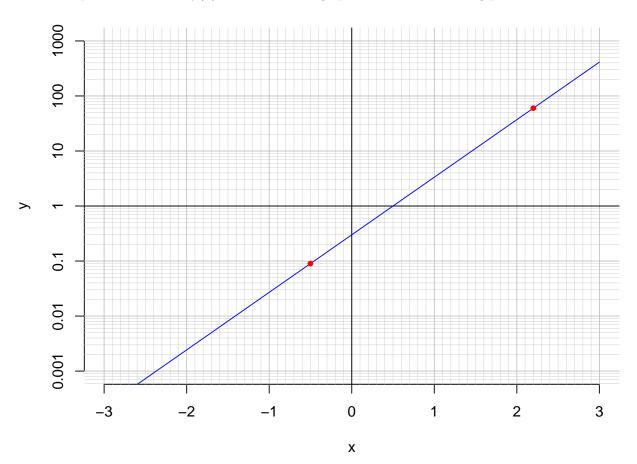
Divide both sides by $\frac{-4}{5}$.

$$\frac{-5}{4} \cdot \log_2\left(\frac{29 \cdot 3}{7}\right) = t$$

Switch sides.

$$t = \frac{-5}{4} \cdot \log_2\left(\frac{29 \cdot 3}{7}\right)$$

3. An exponential function $f(x) = 0.3 \cdot e^{2.41x}$ is graphed below on a semi-log plot.



a. Using the plot above, evaluate f(-0.5).

$$f(-0.5) = 0.09$$

b. Express $f^{-1}(x)$, the inverse of f.

$$f^{-1}(x) = \frac{1}{2.41} \cdot \ln\left(\frac{x}{0.3}\right)$$

c. Using the plot above, evaluate $f^{-1}(60)$.

$$f^{-1}(60) = 2.2$$